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| PATENT APPLICATION TRANSMITTAL LETTER (Large Entity) | Docket No. INTL-0409-US (P8992) |

TO THE ASSISTANT COMMISSIONER FOR PATENTS

Transmitted herewith for filing under 35 U.S.C. 111 and 37 C.F.R. 1.53 is the patent application of:

OLEG B. RASHKOVSKIY

For: **AUTOMATICALLY PREPARING STREAMING VIDEO PROGRAMMING GUIDES**

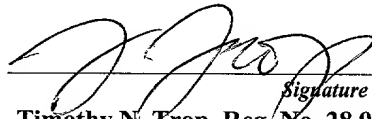Enclosed are:

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Dated: **May 31, 2000**

Signature
Timothy N. Trop, Reg. No. 28,994
TROP, PRUNER & HU, P.C.
8554 Katy Freeway, Suite 100
Houston, Texas 77024
Phone: (713) 468-8880
Fax: (713) 468-8883

cc:

Customer No. 21906

P01LARGE/REV07

APPLICATION

FOR

UNITED STATES LETTERS PATENT

TITLE: AUTOMATICALLY PREPARING STREAMING
            VIDEO PROGRAMMING GUIDES

INVENTORS: OLEG B. RASHKOVSKIY

Express Mail No.: EL542038120US

Date: May 31, 2000

AUTOMATICALLY PREPARING STREAMING
VIDEO PROGRAMMING GUIDES

Background

This invention relates generally to streaming video available for download over the Internet.

A variety of streaming video formats are available for
5 Internet download. Streaming video is video that may begin playback before being completely downloaded. Streaming video reduces the amount of time the user must wait before beginning to enjoy the media. Common streaming video formats include Real Networks, real video format, file
10 extension .ram and Microsoft's Media Player format, file extension .ast. Generally the streaming media is played through a browser plug-in which may also be downloaded.

Because of the ease in preparing streaming videos and making them available over the Internet, an increasing
15 number of streaming videos are available from a wide variety of sources. As a result there are a large number of streaming videos and a correspondingly large number of video sources, many of whom may be unrecognized. This proliferation makes it difficult for users to identify
20 available streaming videos that are of interest. For example, while one may enjoy streaming videos on a particular topic, there is no way for the user to know when a particular streaming video on that topic is available.

1

Thus, there is a need for better ways to facilitate the viewing of streaming video.

Brief Description of the Drawings

Figure 1 is a depiction of a graphical user interface
5   in accordance with one embodiment of the present invention;

Figure 2 is a flow chart for software in accordance with one embodiment of the present invention;

Figure 3 is a flow chart for software in accordance with another embodiment of the present invention;

10   Figure 4 is a front elevational view of a hardware implementation of one embodiment of the present invention; and

Figure 5 is a block diagram for hardware in accordance with one embodiment of the present invention.

Detailed Description

15   Referring to Figure 1, a streaming video programming guide may be implemented as a graphical user interface 22 displayed on a monitor or television screen associated with a processor-based system. The streaming video programming
20   guide may arrange, for selection and viewing, a plurality of representation of streaming video files. These streaming video files are collected automatically by a search engine that automatically and periodically searches the Internet. The user may provide a plurality of
25   categories of topical interest to the user. The search

engine then searches the Internet for streaming video file of interest to a user, for example by using keyword searching.

When appropriate streaming video files that satisfy the criteria set by the user are located, those video files may be identified in the graphical user interface 22 using video thumbnail frames 18, titles 23, and other information 20, 24, 26, 28 and 29 culled from the web site offering the streaming video file for downloading. All of this information may be displayed in a chart format as shown in Figure 1 for selection by the user.

More specifically, the user may select video files for viewing in a variety of different categories. The user may also input keywords that are utilized by a search engine to assemble the graphical user interface 22. For example, in the illustration in Figure 1, the user has provided the keywords "current news", "sports", and "Celine Dion" as topics of interest for viewing streaming videos. In the organization shown in Figure 1, each of the topics or category icons 16 identify a series of three streaming video files that are responsive to the user-provided keywords. Thus, each responsive streaming video file may be represented by a thumbnail frame 18, a title 23 or other descriptive material 20, as well as the type of the file extension 26, the web site sponsoring the streaming video as indicated at 28, and the available connection speed 29.

In addition, quantitative information 24 about the streaming video may be provided. In the case of the streaming video represented by the thumbnail frame 18, the video file is in a 240x180 pixel format and lasts for

5   twenty-eight seconds.

Sufficient information is provided about each of the identified streaming video files to allow the user to determine whether or not the user wishes to view the material. Based on the thumbnail frame 18, the title 23,

10   the length and the file extension 26, the user may decide whether or not to view the material. In one embodiment of the present invention, the user can simply click on any of the identified items including the thumbnail frame 18 and the title 23 to automatically play the video file in place

15   of the graphical user interface 22. In addition, in some embodiments of the present invention, a video file may be played initially within the thumbnail frame 18.

If the user finds that none of the depicted set of video files in a given category is of interest, the user

20   can click on the category icon 16 to display the next series of video files in place of the currently displayed video files. Moreover, in some embodiments of the present invention, if the user clicks on the category icon 16, the entire interface 22 may be converted to a display of video

25   files pertinent to that category. Thus, if the user mouse clicks on the sports icon 16, the current news and Celine

4

Dion video files may be removed from the graphical user interface 22 and replaced with additional video files in the sports category.

Generally, the streaming video files are provided by web sites that also provide descriptions of those video files. The descriptions may include textual material about the particular streaming video files. In addition, descriptive metatags may be provided. Finally, the search engine may search for the particular file extensions associated with streaming video files such as .ram and .ast.

The user can also limit the search done by the search engine to video files in a particular language as indicated by the icon 12. The user can input the desired language using a selection box associated with the icon 12. In addition, the user can limit the search for video files to a given location. In such case, the search engine may search for information in textual form associated with the streaming video files that provide information sufficient to determine the location involved. For example, the textual material accompanying the video may identify key words representative of a given location, such as zip codes, state names or other geographical information.

The search engine may search for a combination of file extensions and key words that correspond to streaming video files having the content requested by the user. The

information may then be parsed into the categories as requested by the user, such as the current news, sports and Celine Dion category icons 16 in the illustrative graphical user interface 22.

5   In a compile mode, the search engine may search for video files, as described above, using the software 32 in one embodiment of the invention shown in Figure 2. The compile mode may occur at regular intervals so that the search engine periodically searches for the videos in the

10   desired categories. Alternatively, the search may be conducted at the time when the user selects the streaming video programming guide.

The search engine searches for video files and related keywords, metatags, connection speeds and file extensions

15   as indicated in block 34. Any responsive video files are then categorized based on key words as indicated in block 36. The video files are then organized according to categories as indicated in block 38. Finally, the graphical user interface 22 is displayed with

20   representations of each of the video files that were located, organized in a grid format as depicted for example in Figure 1 and as indicated in block 40 in Figure 2.

The user may select the video for viewing by mouse clicking on its title 20 or thumbnail frame 18. In

25   addition, the user can link to the web site offering the

video by clicking on the web site uniform resource locator 28.

In a set-up mode implemented by software 82 in one embodiment, the user can specify the search criteria for the compiled software 32 as indicated in Figure 3. The user may specify the file formats as indicated in block 84. For example, the software 82 may provide a graphical user interface that asks the user to input a streaming video file format such as .ram or .ast or to search for all file formats.

Next, the user is asked to specify topical keywords as indicated in block 86. The topical keywords then become the category icons 16 in the resulting graphical user interface 22. In one embodiment of the present invention, the user may provide an overall keyword that becomes the category icon 16 and may also provide additional keywords to further refine the search to obtain the material that the user in fact is actually interested in.

The user may also specify a minimum connection speed as indicated in block 89. Some users may prefer not to view files from sites with slow connection speeds. Also, the user may input the user's connection speed so that the file with the corresponding connection speed may be automatically selected if available.

Next, the user is called upon to set tags as indicated in block 88. The tags may be information about particular

items of interest to the user. For example, the user may
only be interested in getting information on particular web
sites, information of a specific duration, or information
provided by specific types of sources that may be provided
5   for example by metatags.

Next, the user is called upon to specify the language
of the streaming video as indicated in block 90. Finally,
the user may be asked to specify a location that may be
utilized in narrowing the search still further. The user
10   may provide states, cities, countries or zip codes which
may be searched for by the engine to locate geographically
relevant material as indicated in block 92.

Once all the appropriate entries in the graphical user
interface have been filled out, the information is
15   automatically stored (block 94) for automatic development
of the graphical user interface 22 and to automatically
implement the desired search. That is, the search terms
are plugged in as the category icon 16 titles.

The graphical user interface 22 shown in Figure 1 may
20   be used with a variety of processor-based systems
including, but not limited to, desktop computers, laptop
computers, appliances such as telephones and Internet
appliances, and the like. In one embodiment of the present
invention, shown in Figure 4, the set-top box 42 may be
25   coupled to a television receiver 136. The set-top box 42
conveniently sits atop the television receiver 136--ergo,

the name set-top box. The television receiver 136 may
include a display screen 138 that displays the graphical
user interface 22.

Both the set-top box 42 and the television receiver
5   136 include infrared interfaces 134 and 140 respectively.
A remote control unit 44 may include its own infrared
interface 45 for interacting and controlling the television
receiver 136 and the set-top box 42. Thus, inputs provided
through the remote control unit 44 may be provided over a
10   wireless interface, such as a radio frequency interface, to
the interfaces 134 and 140. The wireless signals
appropriately control the set-top box 42 and the television
receiver 136. The user can implement mouse-like cursor
commands through the cursor controls 46 which include a
15   plurality of directional buttons and a select button. In
addition, channel entries may be entered through channel
keys 48.

Referring next to Figure 5, the set-top box 42 may
include a processor 50 coupled to a bridge 52. The bridge
20   52 couples a bus 56 and the system memory 54. Also coupled
to the bus 56 are a display controller 64, a television
tuner/capture card 62 and an additional bridge 58. The
display controller 64 may be coupled to the television
receiver 136. The television tuner/capture card 62 may be
25   coupled to an appropriate source of video such as a

broadcast antenna, a satellite receiver or a cable
connection.

The bridge 58 may be coupled to a hard disk drive
(HDD) 60 that stores the software 82 and 32. In addition,
5   the hard disk drive 60 may include a database that stores
information about the selected categories for search,
search terms, and the information located in an appropriate
search.

In one embodiment of the present invention, the search
10   may be actually implemented by the software 82 and 32
stored on the hard disk drive 60. In other embodiments,
the search is actually implemented by a web server that is
automatically called up over the Internet when the search
is requested.

15   The bridge 58 couples a bus 68. The bus 68 is coupled
to a basic input/output system (BIOS) 70 and the interface
134. The interface 134 implements a wireless interface
with an interface 45 associated with the remote control
unit 44. The remote control unit 44 includes the interface
20   45 and a controller 72 that receives keypad inputs and
translates them into appropriate signals for transmission
to the interface 134.

While the present invention has been described with
respect to a limited number of embodiments, those skilled
25   in the art will appreciate numerous modifications and
variations therefrom. It is intended that the appended

claims cover all such modifications and variations as fall
within the true spirit and scope of this present invention.

What is claimed is:

1   1.   A method comprising:

2   automatically searching for streaming video

3   files;

4   selecting particular streaming video files based

5   on keywords; and

6   generating representations of said streaming

7   video files organized by categories for display as a

8   graphical user interface.

1   2.   The method of claim 1 where automatically

2   searching for streaming video files includes automatically

3   searching for predetermined file extensions associated with

4   streaming video files.

1   3.   The method of claim 1 wherein automatically

2   searching for streaming video files includes automatically

3   searching for streaming video file extensions and for

4   keywords in web sites associated with said streaming video

5   files.

1   4.   The method of claim 3 wherein generating

2   representations of said streaming video files includes

3   organizing said video files into a category based on the

4   keyword used to locate said video file.

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1       5.    The method of claim 1 including displaying a
2  graphical user interface containing representations of a
3  plurality of categories and video files associated with
4  said categories.


1       6.    The method of claim 5 including representing each
2  video file by a thumbnail frame.


1       7.    The method of claim 6 including automatically
2  playing said video file in response to a user selection of
3  said thumbnail video.


1       8.    The method of claim 1 including using said
2  keywords as category icons and displaying a plurality of
3  video files associated with each category icon.


1       9.    The method of claim 8 including accessing said
2  video file over the Internet in response to a user
3  selection of said video file.


1       10.   The method of claim 1 wherein automatically
2  searching for streaming video files includes periodically
3  automatically searching for streaming video files.


1       11.   An article comprising a medium storing
2  instructions that enable a processor-based system to:
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3   automatically search for streaming video files;

4   select particular streaming video files based on

5   keywords; and

6   generate representations of said streaming video

7   files organized by categories for display as a graphical

8   user interface.

1   12.   The article of claim 11 further storing

2   instructions that enable the processor-based system to

3   automatically search for predetermined file extensions

4   associated with streaming video files.

1   13.   The article of claim 11 further storing

2   instructions that enable the processor-based system to

3   automatically search for streaming video file extensions

4   and for keywords in web sites associated with said

5   streaming video files.

1   14.   The article of claim 13 further storing

2   instructions that enable the processor-based system to

3   organize said video files into a category based on the

4   keyword used to locate said video file.

1   15.   The article of claim 11 further storing

2   instructions that enable the processor-based system to

3   display a graphical user interface containing

4   representations of a plurality of categories of video files
5   associated with said categories.

1   16.   The article of claim 15 further storing
2   instructions that enable the processor-based system to
3   represent each video file by a thumbnail frame.

1   17.   The article of claim 16 further storing
2   instructions that enable the processor-based system to
3   automatically play said video file in response to a user
4   selection of said thumbnail video.

1   18.   The article of claim 11 further storing
2   instructions that enable the processor-based system to use
3   said keywords as category icons and display a plurality of
4   video files associated with each category icon.

1   19.   The article of claim 18 further storing
2   instructions that enable the processor-based system to
3   access said video file over the Internet in response to a
4   user selection of said video file.

1   20.   A system comprising:
2   a processor; and
3   a storage coupled to said processor, said storage
4   storing instructions that enable the processor to

5   automatically search for streaming video files, select

6   particular video files based on keywords, and generate

7   representations of said streaming video files organized by

8   categories for display as a graphical user interface.

1   21. The system of claim 20 including a set-top box.

1   22. The system of claim 21 including a television

2   receiver.

1   23. The system of claim 21 including a remote control

2   unit.

AUTOMATICALLY PREPARING STREAMING
VIDEO PROGRAMMING GUIDES

Abstract of the Disclosure

A programming guide for streaming video files may be automatically compiled in response to a user request. The user may provide keywords for categories of streaming video
5   files that are of interest. A graphical user interface is automatically developed which splits responsive streaming video files into categories requested by the user. Each streaming video file may be represented in a user selected fashion. For example, the streaming videos may be
10   represented by a representative frame, title or other information. The user can then click on any of the streaming video files, broken down into the appropriate categories, to begin viewing a streaming video file of interest.

17

STREAMING VIDEO PROGRAMMING GUIDE

Language [English] Location [None] ⌐14

⌐12
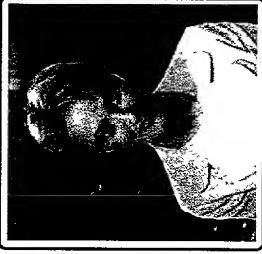
Current News ⌐16	Air force TV News ⌐20 240x180/ 3mins 26sec RAM fastv.com T1	BC TV News 160x112/1hr 00min RAM tv4bc.com 28.8 ⌐29	CNN All sport news Sunday 240x180/11min14sec RAM fastv.com/p.975
Sports ⌐18	CNN ⌐20 While We Are On ⌐23 240x180/28sec ⌐24 RAM ⌐26 fastv.com ⌐28	10Top Website 240/176/31sec RAM oswego.edu T1	Mississippi vs. Vanderbilt Sports Sec Basketball 240x180/14sec RAM Fastv.com
Celine Dion	CNN She Comes Back 240x180/28sec RAM fastv.com	E!Online Beauty & The Beast 160x112/48sec RAM eonline.com	CNN Celine Dion.... 240x180/25sec RAM Fastv.com

⌐22

FIG. 1

FIG. 2

```
      ╭─────────────╮
     (   Compile     )───32
      ╰─────────────╯
            │
            ▼
   ┌────────────────────┐
   │  Search For Video  │───34
   │ Related Keywords,  │
   │ Tags File Extensions, │
   │  And Speed         │
   └────────────────────┘
            │
            ▼
   ┌────────────────────┐
   │  Catagorize Videos │───36
   └────────────────────┘
            │
            ▼
   ┌────────────────────┐
   │   Organize Videos  │───38
   └────────────────────┘
            │
            ▼
   ┌────────────────────┐
   │  Display Video EPG │───40
   └────────────────────┘
            │
            ▼
      ╭─────────────╮
     (     End       )
      ╰─────────────╯
```

FIG. 2

FIG. 3

```
      ╭─────────────╮
     (    Setup      )───82
      ╰─────────────╯
            │
            ▼
   ┌────────────────────┐
   │ Specify File Formats │───84
   └────────────────────┘
            │
            ▼
   ┌────────────────────┐
   │ Specify Topical Keywords │───86
   └────────────────────┘
            │
            ▼
   ┌────────────────────┐
   │  Connection Speed  │───89
   └────────────────────┘
            │
            ▼
   ┌────────────────────┐
   │      Set Tags      │───88
   └────────────────────┘
            │
            ▼
   ┌────────────────────┐
   │  Specify Language  │───90
   └────────────────────┘
            │
            ▼
   ┌────────────────────┐
   │  Specify Location  │───92
   └────────────────────┘
            │
            ▼
   ┌────────────────────┐
   │       Store        │───94
   └────────────────────┘
            │
            ▼
      ╭─────────────╮
     (     End       )
      ╰─────────────╯
```
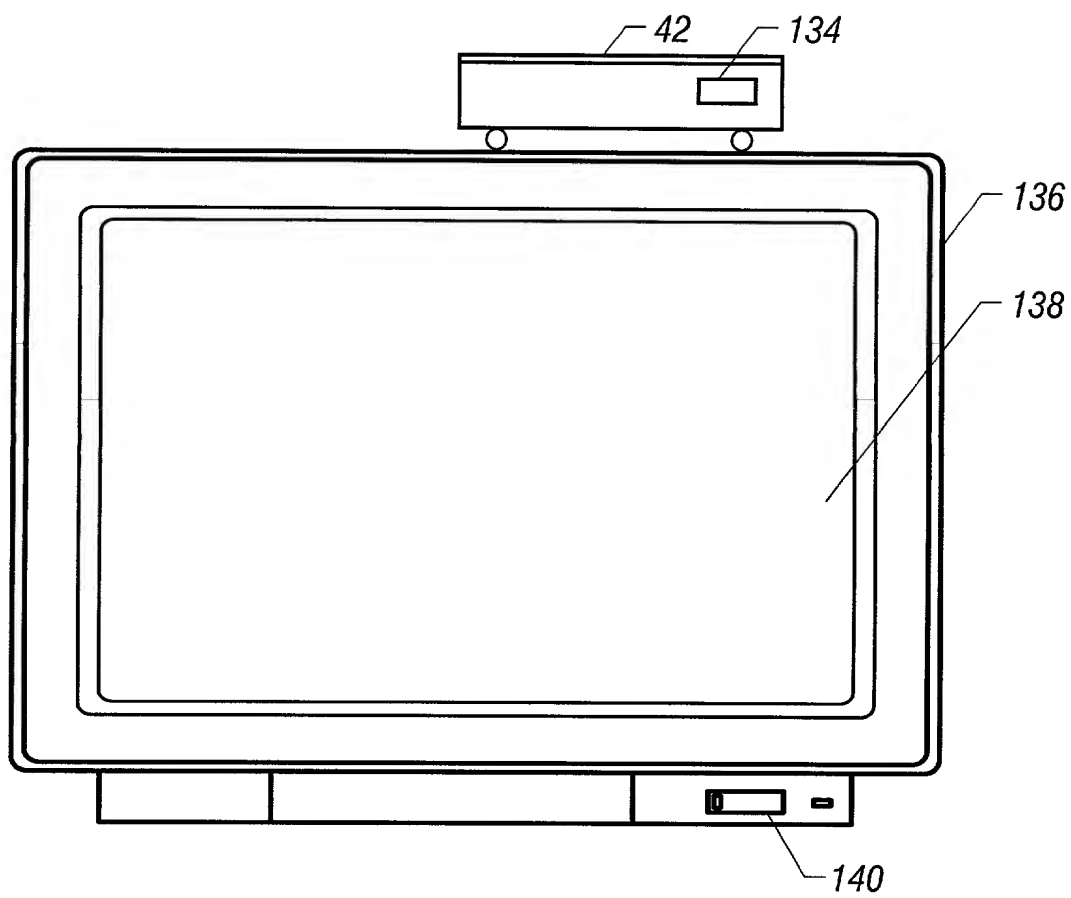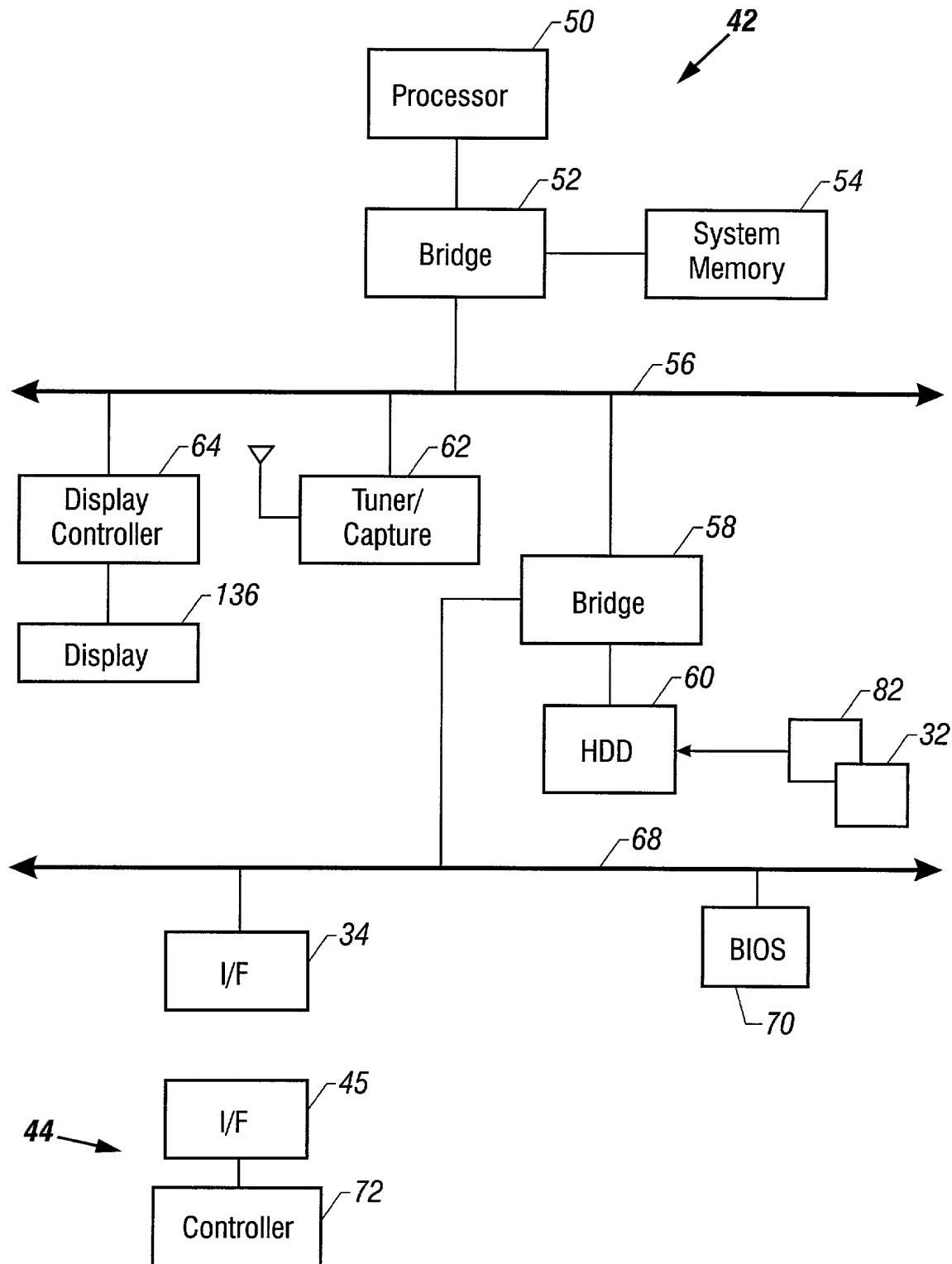
FIG. 3
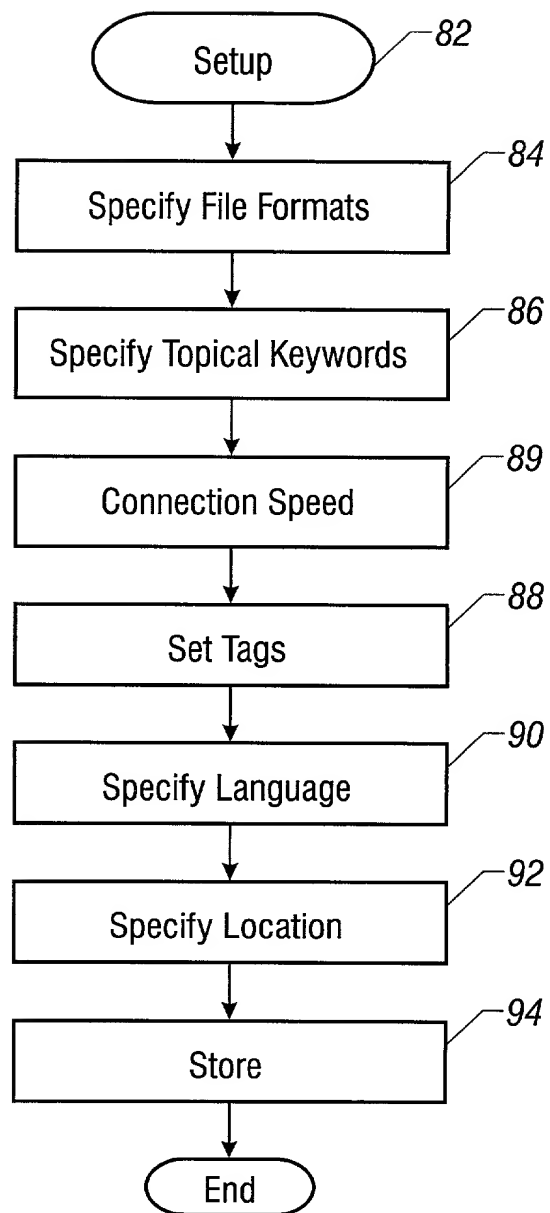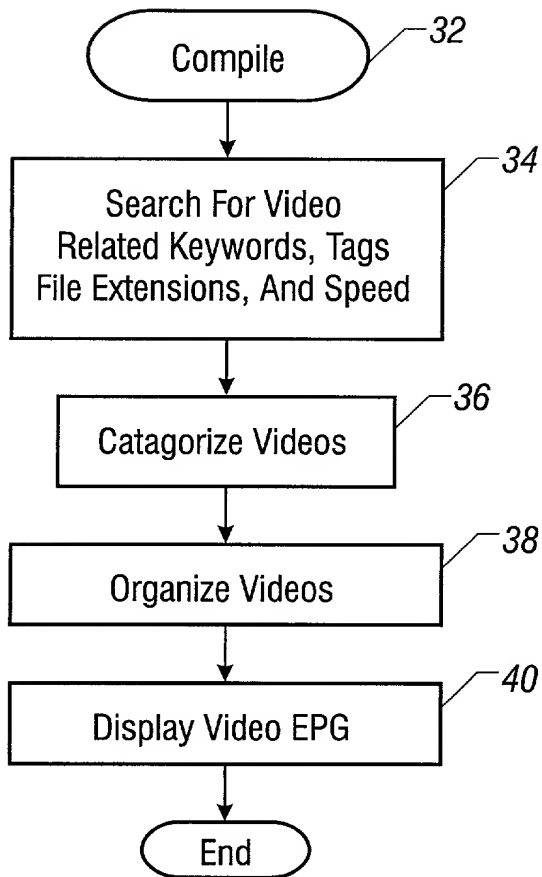
FIG. 4

FIG. 5

<u>DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION</u>

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below, next to my name.

I believe I am the original, first, and sole inventor (if only one name is listed below) or an original, first, and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

AUTOMATICALLY PREPARING STREAMING VIDEO PROGRAMMING GUIDES

the specification of which

X	is attached hereto.
	was filed on _____ as
	United States Application Number _____
	or PCT International Application Number _____
	and was amended on _____
	(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claim(s), as amended by any amendment referred to above. I do not know and do not believe that the claimed invention was ever known or used in the United States of America before my invention thereof, or patented or described in any printed publication in any country before my invention thereof or more than one year prior to this application, that the same was not in public use or on sale in the United States of America more than one year prior to this application, and that the invention has not been patented or made the subject of an inventor's certificate Issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representatives or assigns more than twelve months (for a utility patent application) or six months (for a design patent application) prior to this application.

I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d), of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

<u>Prior Foreign Application(s):</u>   <u>Priority Claimed</u>

Number	(Country)	(Day/Month/Year Filed)	Yes	No
Number	(Country)	(Day/Month/Year Filed)	Yes	No
Number	(Country)	(Day/Month/Year Filed)	Yes	No

1

I hereby claim the benefit under title 35, United States Code, Section 119(e) of the United States provisional application(s) listed below:

_____ _____
(Application Number)   (Filing Date)

_____ _____
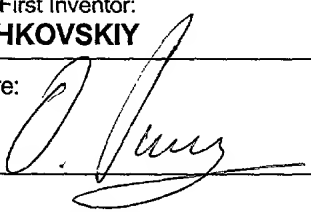(Application Number)   (Filing Date)

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal regulations, Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

_____ _____ _____
(Application Number)   Filing Date   (Status-patented, pending, abandoned)

_____ _____ _____
(Application Number)   Filing Date   (Status-patented, pending, abandoned)

I hereby appoint Timothy N. Trop, Reg. No. 28,994; Fred G. Pruner, Jr., Reg. No. 40,779 and Dan C. Hu, Reg. No. 40,025 my patent attorneys, of TROP, PRUNER & HU, P.C., with offices located at 8554 Katy Freeway, Ste. 100, Houston, TX 77024, telephone (713) 468-8880, and Joseph R. Bond, Reg. No. 36,458; Richard C. Calderwood, Reg. No. 35,468; Sean Fitzgerald, Reg. No. 32,027; David J. Kaplan, Reg. No. 41,105; Leo V. Novakoski, Reg. No. 37,198; Naomi Obinata, Reg. No. 39,320; Thomas C. Reynolds, Reg. No. 32,488; Steven P. Skabrat, Reg. No. 36,279; Howard A. Skaist, Reg. No. 36,008; Steven C. Stewart, Reg. No. 33,555; Raymond J. Werner, Reg. No. 34,752; and Charles K. Young, Reg. No. 39,425; my patent attorneys, of INTEL CORPORATION; with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith.

Send correspondence to Timothy N. Trop, TROP, PRUNER & HU, P.C., 8554 Katy Freeway, Ste. 100, Houston, TX 77024 and direct telephone calls to Timothy N. Trop, (713) 468-8880.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

2

Full Name of Sole/First Inventor: OLEG B. RASHKOVSKIY	
Inventor's Signature:	Date: 05/17/2000
Residence: CUPERTINO, CALIFORNIA	Citizenship: U.S.
Post Office Address: 19312 GREENWOOD DRIVE, CUPERTINO, CALIFORNIA 95014	

INTL-0409 -US (P8992)

3